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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,615	09/20/2005	Masayuki Hoshino	L9289.05173	8137

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STEVENS, DAVIS, MILLER & MOSHER, LLP  
1615 L. STREET N.W.  
SUITE 850  
WASHINGTON, DC 20036

EXAMINER

NGUYEN, LINH V

ART UNIT PAPER NUMBER

2819

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/549,615

Applicant(s)

HOSHINO ET AL.

Examiner

Linh V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/20/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This office action is in response to communication filed on 09/20/05. Claims 1 - 7 are pending on this application.

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Sim et al. Pub. NO: US 2004/0208145.

Regarding claim 1, Fig. 2 of Sim et al. disclosing a coding (31) apparatus comprising : a coder (Fig. 3) which encodes transmission data (X<sub>k</sub>) and outputs

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systematic bits (Fig. 3 [X<sub>k</sub>]) and parity bits (Fig. 3[Z<sub>k</sub>, Z'<sub>k</sub>]); a modulator (33) that modulates the output systematic bits (35a) and parity bits (35b) schemes; and output systematic in mutually different modulation a transmitter that transmits the modulated systematic bits and parity bits from respective antennas (Fig. 4).

Regarding claim 2, wherein the modulator has: a modulation scheme instructor that applies different modulation schemes to the systematic bits and parity bits (Fig. 3 disclosing the output systematic bits X<sub>k</sub>, and output parity bits Z<sub>k</sub>, Z'<sub>k</sub> of the encoder having different modulation schemes instruction) ; a bit arrangement determiner (35) that determines bit arrangements of the systematic bits (35a) and the parity bits (35b) according the applied modulation schemes (33); and a mapping section that performs symbol mapping on the systematic bits and the parity bits with the determined bit arrangements (Fig. 4).

Regarding claim 3, wherein the modulation scheme instructor applies a modulation scheme with a larger modulation M-ary number to the parity bits than the systematic bits (Fig. 4 for disclosing the modulation schemes having more parity bits than system bits), and the bit arrangement determiner determines a bit arrangement (Fig. 4) where the parity bits are arranged on the in-phase axis and the quadrature axis (in-phase and quadrature axis of parity bits are intrinsic characteristics for space-time turbo coding to in wireless communication).

Regarding claim 4, wherein the coder (fig. 3) outputs plurality of parity bits (Z<sub>k</sub>, Z<sub>k</sub>'s) for one systematic bit (X<sub>k</sub>), and the bit arrangement determiner determines different bit arrangements for the plurality of parity bits (Fig. 4).

Regarding claim 7, the claim incorporated the same subject matter as of claim 1, and rejected along the same rationale.

### ***Allowable Subject Matter***

5. Claims 5 and 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 5, the prior art does not disclose wherein the modulator further has an arrangement axis exchanger that exchanges arrangement axes on coordinates to perform bit arrangements determined by the bit arrangement determiner, and the mapping section performs symbol mapping on the systematic bits and the parity bits with bit arrangements the coordinates where the arrangement axes are exchanged.

With respect to claim 6, the prior art does not disclose a detector that detects the number retransmission times transmission data, and wherein the bit arrangement determiner changes arrangements of the systematic and the parity bits corresponding to the detected number of retransmission times.

### ***Prior Art***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

### ***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Linh Van Nguyen whose telephone number is (571) 272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Rexford Barnie can be reached at (571) 272-7492. The fax phone numbers for the organization where this application or proceeding is assigned are (571-273-8300) for regular communications and (571-273-8300) for After Final communications.

01/13/06

Linh Van Nguyen

A handwritten signature in black ink, appearing to read 'Linh Van Nguyen', written in a cursive style.

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